

**IN THE ABSTRACT:**

Please add the Abstract of the Disclosure that is provided on a separate sheet.

### Abstract of the Disclosure

The present invention provides a monoclonal antibody or a fragment thereof binding to the extracellular I-domain of integrin alpha10beta1 and a hybridoma cell line deposited at the Deutsche Sammlung von Microorganismen und Zellkulturen GmbH under the accession number DSM ACC2583. Furthermore, the present invention also provides a monoclonal antibody or a fragment thereof binding to the extracellular I-domain of integrin alpha10beta1 produced by the hybridoma cell line deposited. Method and uses of the antibody or a fragment thereof in identifying and selecting cells of a chondrogenic nature for treatment purposes, in particular for the identification and isolation of chondrocytes, mesenchymal progenitor cells and embryonic stem cells for tissue engineering of cartilage, or for identifying diagnostic and therapeutic tools in studying the biological role and the structural/functional relationships of the integrin alpha10beta1 with its various extracellular matrix ligands are also included.